Species Differences in Antimicrobial Resistance among Coagulase-negative Staphylococci from Blood in the UK and Ireland

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Background
Coagulase-negative staphylococci are frequent agents of bacteraemia but their resistance patterns receive relatively little attention.

Methods
From 2001 to 2005, 29 UK and Irish centres supplied 1011 isolates of coagulase-negative staphylococci from blood. Isolates were identified by PCR. MICs were measured centrally by BSAC methods and compared by % non-susceptibility (for antibiotics with clear sub-populations) or geometric mean MIC (for highly active agents with unimodal MIC distributions). Regression analyses used robust errors to account for clustering by collection centre.

Results
The majority (61%) of isolates were S. epidermidis. S. haemolyticus were positively associated with line-derived infections (79% of isolates, vs 62% for other species), and with ICU and haematology/oncology patients (62% vs 39% for other species). S. capitis were associated with young children (31% were from those aged <4 years, vs 10% for other species).

- 70% of S. epidermidis isolates were non-susceptible to three or more of the antibiotics CIP, ERY, GEN, OXA, TEC and TET.
- 61% of S. haemolyticus isolates were non-susceptible to three or more of the antibiotics CIP, ERY, GEN, OXA, TEC and TET.

Conclusions
- Coagulase-negative staphylococci from bacteremia in the UK and Ireland are frequently multi-resistant.
- There are sizeable differences in prevalence of resistance between species, with S. haemolyticus typically more resistant than others.

Abbreviations
- Breakpoints (mg/L)
  - BPR ceftobiprole
  - CIP ciprofloxacin
  - DAP daptomycin
  - TEC tigecycline
  - TET tetracycline
- Geometric mean MICs
  - ERY erythromycin
  - GEN gentamicin
  - OXA oxacillin
  - TLV telavancin
  - VAN vancomycin

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